

CLAIMS

We claim:

1. A recombinant nucleic acid, capable of hybridizing to a nucleic acid comprising a nucleic acid sequence selected from the group consisting of the nucleic acid sequences set forth in SEQ ID NOs:1, 3, and 5, or complements thereof.
2. A recombinant nucleic acid, comprising a nucleic acid sequence having at least about 90% identity to a nucleic acid sequence selected from the group consisting of the nucleic acid sequences set forth in SEQ ID NOs:1, 3, and 5 or complements thereof.
3. A recombinant nucleic acid according to claim 1 or 2, wherein said nucleic acid comprises a nucleic acid sequence selected from the group consisting of the nucleic acid sequences set forth in SEQ ID NOs:1, 3, and 5 or complements thereof.
4. A recombinant polypeptide, comprising an amino acid sequence having at least about 95% identity to an amino acid sequence selected from the group consisting of the amino acid sequences set forth in SEQ ID NOs:2, 4, and 6.
5. A recombinant polypeptide according to claim 4, further comprising an amino acid sequence selected from the group consisting of the amino acid sequences set forth in SEQ ID NOs:2, 4, and 6.
6. A recombinant polypeptide, comprising an amino acid sequence which is encoded by the nucleic acid of claim 2.
7. A method for screening for a candidate bioactive agent capable of modulating phosphorylation of JNK, comprising
- i) contacting a candidate bioactive agent to a mammalian cell comprising a recombinant MINK3 nucleic acid encoding a MINK3 protein and a JNK protein; and
 - ii) determining the phosphorylation of said JNK protein in the presence of candidate agent;
- wherein said recombinant MINK3 nucleic acid is expressed in said mammalian cell, wherein said encoded MINK3 protein comprises an amino acid sequence having at least about 90% identity to an amino acid sequence selected from the group consisting of the amino acid sequences set forth in SEQ ID NOs:2, 4 and 6, wherein said encoded MINK3 protein will phosphorylate said JNK protein in the absence of said candidate bioactive agent, and wherein a decrease in the phosphorylation of said JNK protein in the presence of said candidate bioactive agent indicates that said candidate bioactive agent is capable of modulating phosphorylation of JNK.
8. A method for screening for a candidate bioactive agent capable of modulating mammalian ERK phosphorylation, comprising:

i) contacting a candidate bioactive agent to a mammalian cell comprising a recombinant MINK3 nucleic acid encoding a MINK3 protein and an ERK protein; and

ii) determining the phosphorylation of said ERK protein in the presence of candidate agent;

wherein said recombinant MINK3 nucleic acid is expressed in said mammalian cell, wherein said encoded MINK3 protein comprises an amino acid sequence having at least about 90% identity to an amino acid sequence selected from the group consisting of the amino acid sequences set forth in SEQ ID NOs:2, 4 and 6, wherein said encoded MINK3 protein will phosphorylate said ERK protein in the absence of said candidate bioactive agent, and wherein a decrease in the phosphorylation of said ERK protein in the presence of said candidate bioactive agent indicates that said candidate bioactive agent is capable of modulating phosphorylation of ERK.

9. A method for screening for a candidate bioactive agent capable of modulating mammalian JNK activity, comprising:

i) contacting a candidate bioactive agent to a mammalian cell comprising a recombinant MINK3 nucleic acid encoding a MINK3 protein and an JNK protein; and

ii) determining the activity of said JNK protein in the presence of candidate agent;

wherein said recombinant MINK3 nucleic acid is expressed in said mammalian cell, wherein said encoded MINK3 protein comprises an amino acid sequence having at least about 90% identity to an amino acid sequence selected from the group consisting of the amino acid sequences set forth in SEQ ID NOs:2, 4 and 6, wherein said encoded MINK3 protein will activate said JNK protein in the absence of said candidate bioactive agent, and wherein a decrease in the activity of said JNK protein in the presence of said candidate bioactive agent indicates that said candidate bioactive agent is capable of modulating JNK activity.

10. A method for screening for a candidate bioactive agent capable of modulating mammalian ERK activity, comprising:

i) contacting a candidate bioactive agent to a mammalian cell comprising a recombinant MINK3 nucleic acid encoding a MINK3 protein and an ERK protein; and

ii) determining the activity of said ERK protein in the presence of candidate agent;

wherein said recombinant MINK3 nucleic acid is expressed in said mammalian cell, wherein said encoded MINK3 protein comprises an amino acid sequence having at least about 90% identity to an amino acid sequence selected from the group consisting of the amino acid sequences set forth in SEQ ID NOs:2, 4 and 6, wherein said encoded MINK3 protein will activate said ERK protein in the absence of said candidate bioactive agent, and wherein a decrease in the activity of said ERK protein in the presence of said candidate bioactive agent indicates that said candidate bioactive agent is capable of modulating ERK activity.

11. A method for screening for a candidate bioactive agent capable of modulating proliferation in a mammalian cell, comprising:

a) contacting a candidate bioactive agent to a mammalian cell comprising a recombinant

MINK3 nucleic acid encoding a MINK3 protein; and

b) determining the effect on the cell in the presence and absence of said candidate bioactive agent;

5 wherein said recombinant MINK3 nucleic acid is expressed in said mammalian cell, and wherein said encoded MINK3 protein comprises an amino acid sequence having at least about 90% identity to an amino acid sequence selected from the group consisting of the amino acid sequences set forth in SEQ ID NOs:2, 4 and 6.

~~12.~~ A method for screening for a candidate bioactive agent capable of modulating growth factor induced-ERK activation in a mammalian cell, comprising:

10 a) contacting a candidate bioactive agent to a mammalian cell comprising a recombinant MINK3 nucleic acid encoding a MINK3 protein; and
b) determining ERK activity in the presence and absence of said candidate bioactive agent;

15 wherein said recombinant MINK3 nucleic acid is expressed in said mammalian cell, and wherein said encoded MINK3 protein comprises an amino acid sequence having at least about 90% identity to an amino acid sequence selected from the group consisting of the amino acid sequences set forth in SEQ ID NOs:2, 4 and 6.

20 ~~13.~~ A method for diagnosing a mammalian cell proliferation disorder, comprising sequencing at least a portion of at least one MINK3 gene encoding a gene transcript comprising a nucleic acid sequence selected from the group consisting of the nucleic acid sequences set forth in SEQ ID NOs:1, 3, and 5 and determining the sequence of said MINK3 gene or a portion thereof.

~~14.~~ A medicament for the treatment of a mammalian cell proliferation disorder, comprising a MINK3 antisense nucleic acid comprising a nucleic acid sequence complementary the nucleic acid sequence set forth by nucleotides 2804-3187 in SEQ ID NO:1.

25 ~~15.~~ A method for screening for a candidate agent capable of modulating cell survival, comprising:
a) contacting a candidate bioactive agent to a mammalian cell comprising a recombinant MINK3 nucleic acid encoding a MINK3 protein; and
b) determining the ratio of the amount of cleaved Rb to the amount of native Rb in the presence and absence of candidate agent;

30 wherein said recombinant MINK3 nucleic acid is expressed in said mammalian cell, and wherein said encoded MINK3 protein comprises an amino acid sequence having at least about 90% identity to an amino acid sequence selected from the group consisting of the amino acid sequences set forth in SEQ ID NOs:2, 4 and 6.

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